



B31142

Undercarriage Kit

Ford Explorer	1991 - 01
Ford Explorer Sport Trac	2001 - 05
Ford Ranger	1983 - 11
Mazda B3000/4000	1994 - 09

Parts List & Installation Instructions

⚠ CAUTION

Read this document before installing the snowplow.

⚠ CAUTION

See your BLIZZARD® outlet/Web site for specific vehicle application recommendations before installation. The Undercarriage Selection Guide has specific vehicle and snowplow requirements.

SAFETY

SAFETY DEFINITIONS

⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

⚠ CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE: Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

WARNING/CAUTION & INSTRUCTION LABELS

Become familiar with and inform users about the warning and instruction labels on the back of the blade.

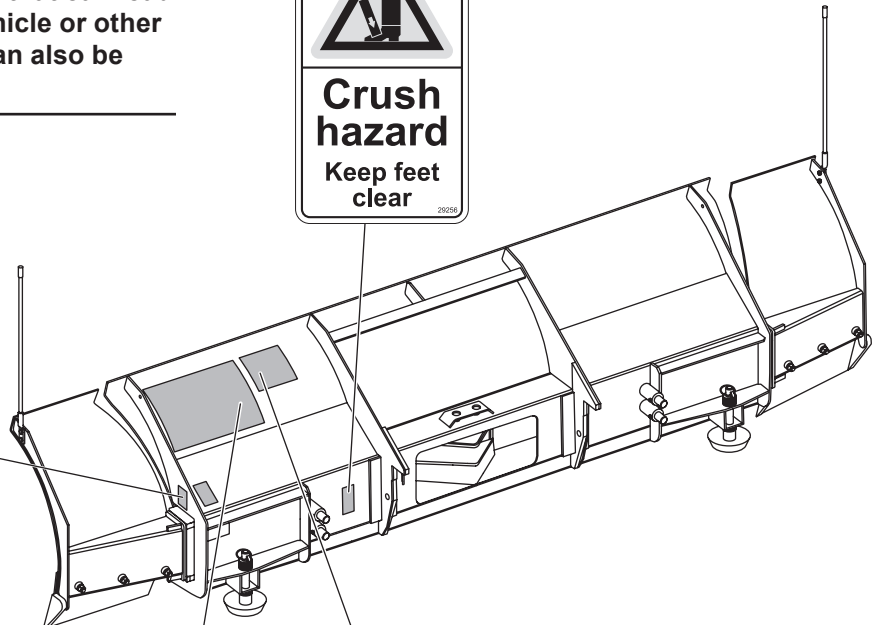
NOTE: If labels are missing or cannot be read, see your sales outlet.

Multiple Pinch Points Label



POWER PLOW® and SPEEDWING™ Blades Only (both sides)

Crush Hazard Label



Instruction Label

ATTACH	⚠ WARNING	DETACH
<ol style="list-style-type: none"> Slowly drive vehicle forward to engage mount adapter into A-frame. Move power switch to center or "OFF" position. Plug in electrical harnesses. Push and hold power switch RIGHT and push UP and hold arm/blade operation switch. Arm will engage mount adapter and pull snowplow toward vehicle. Install both hitch pins. Hitch pin is fully engaged when pin handle is against the pin guide plate. While holding power switch RIGHT, push DOWN and hold arm/blade operation switch. Arm will disengage mount adapter to relieve tension on the stand. Pull and raise the stand until the stand pin seats into upper hole on the A-frame. Move power switch to left or "Flowing" position. 	<p>Keep fingers away from snowplow and truck attachment points. POWER HITCH™ 2 arm raises behind undercarriage pushbeam.</p>	<ol style="list-style-type: none"> Lower snowplow onto ground with blade straight. Turn plow control in cab OFF. Move power switch to center or "OFF" position. While holding the power switch RIGHT, push DOWN and hold the arm/blade operation switch. Arm will disengage mount adapter to relieve tension on the stand. Pull and lower the stand until stand pin seats into lower hole on the A-frame and stand and light tower side plates contact. Push and hold power switch RIGHT and push UP the arm/blade operation switch. Arm will engage mount adapter and pull snowplow tightly to vehicle. Remove both hitch pins. While holding power switch RIGHT, push DOWN and hold arm/blade operation switch to fully lower arm. Unplug electrical harnesses.

Read Owner's Manual for complete instructions.

POWER HITCH™ 2

BLIZZARD

U.S. patents 5,638,618; 5,899,007; 6,176,689; 6,253,470; 6,276,076; 6,393,737; 6,408,549; 6,412,199; 6,442,877; 6,615,513; 7,134,227; 7,400,058; 7,430,821; 7,737,576. CAN patents 2,184,922; 2,229,763; 2,259,508; 2,359,145; 2,358,354; 2,466,195; 2,552,633; and other patents pending.

Warning/Caution Label

	<p>⚠ WARNING</p> <p>Lower blade when vehicle is parked.</p>
	<p>Do not exceed GVWR or GAWR including blade and ballast.</p>
	<p>⚠ CAUTION</p> <p>Read Owner's Manual before operating or servicing snowplow.</p>
	<p>Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.</p>
	<p>Plowing speed should not exceed 10 mph (16 km/h).</p>
	<p>See your sales outlet/Web site for specific vehicle application recommendations.</p>

SAFETY

SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating or making adjustments.

⚠ WARNING

Lower blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.

⚠ WARNING

The driver shall keep bystanders clear of the blade when it is being raised, lowered or angled. Do not stand between the vehicle and the blade or within 8 feet of a moving blade. A moving or falling blade could cause personal injury.

⚠ WARNING

Keep hands and feet clear of the blade and A-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.

⚠ WARNING

Do not exceed GVWR or GAWR including the blade and ballast. The rating label is found on the driver-side vehicle door cornerpost.

⚠ WARNING

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

⚠ WARNING

Remove blade assembly before placing vehicle on hoist.

⚠ CAUTION

Refer to the Undercarriage Selection Guide for minimum vehicle recommendations and ballast requirements.

PERSONAL SAFETY

- Remove ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or snowplow.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

FIRE AND EXPLOSION

⚠ WARNING

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones, text messaging devices, pagers or two-way radios.

VENTILATION

⚠ WARNING

Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.

SAFETY & TORQUE SPECIFICATIONS

NOISE

Airborne noise emission during use is below 70 dB(A) for the snowplow operator.

VIBRATION

Operating snowplow vibration does not exceed 2.5 m/s² to the hand-arm or 0.5 m/s² to the whole body.

TORQUE CHART

⚠ CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the torque chart. Use standard methods and practices when attaching snowplow including proper personal protective safety equipment.



Grade Identification for J429–Grade 5 Bolt



Grade Identification for J429–Grade 8 Bolt

SAE J429 Grade 5 Torque Values				SAE J429 Grade 8 Torque Values			
Nominal Thread Size	Clamp Loads (lb)	Tightening Torque		Nominal Thread Size	Clamp Loads (lb)	Tightening Torque	
		"Lubricated"	"Dry"			"Lubricated"	"Dry"
1/4-20	2,000	6 ft-lb	8 ft-lb	1/4-20	2,850	9 ft-lb	12 ft-lb
5/16-18	3,350	13 ft-lb	18 ft-lb	5/16-18	4,700	18 ft-lb	25 ft-lb
3/8-16	4,950	23 ft-lb	31 ft-lb	3/8-16	6,950	32 ft-lb	44 ft-lb
7/16-14	6,800	37 ft-lb	50 ft-lb	7/16-14	9,600	53 ft-lb	70 ft-lb
1/2-13	9,050	57 ft-lb	75 ft-lb	1/2-13	12,800	80 ft-lb	107 ft-lb
9/16-12	11,600	82 ft-lb	109 ft-lb	9/16-12	16,400	115 ft-lb	154 ft-lb
5/8-11	14,500	113 ft-lb	151 ft-lb	5/8-11	20,300	159 ft-lb	211 ft-lb
3/4-10	21,300	200 ft-lb	266 ft-lb	3/4-10	30,100	282 ft-lb	376 ft-lb
7/8-9	29,435	321 ft-lb	430 ft-lb	7/8-9	41,550	454 ft-lb	606 ft-lb
1-8	38,600	482 ft-lb	640 ft-lb	1-8	54,540	680 ft-lb	900 ft-lb



Grade Identification for Metric–Grade 8.8 Bolt



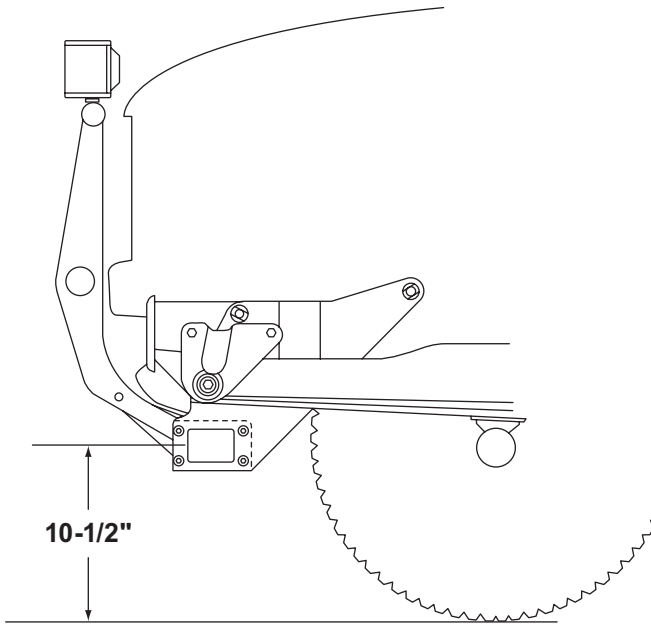
Grade Identification for Metric–Grade 10.9 Bolt

Metric Class 8.8 Torque Values				Metric Class 10.9 Torque Values			
Diameter (mm)	Clamp Loads (lb)	Tightening Torque		Diameter (mm)	Clamp Loads (lb)	Tightening Torque	
		"Lubricated"	"Dry"			"Lubricated"	"Dry"
5	1,389	3 ft-lb	5 ft-lb	5	1,987	5 ft-lb	7 ft-lb
6	1,965	6 ft-lb	8 ft-lb	6	2,812	8 ft-lb	11 ft-lb
7	2,826	10 ft-lb	13 ft-lb	7	4,044	14 ft-lb	19 ft-lb
8	3,579	14 ft-lb	19 ft-lb	8	5,121	20 ft-lb	27 ft-lb
10	5,672	28 ft-lb	37 ft-lb	10	8,116	40 ft-lb	53 ft-lb
12	8,243	49 ft-lb	65 ft-lb	12	11,796	70 ft-lb	92 ft-lb
14	11,246	77 ft-lb	103 ft-lb	14	16,092	111 ft-lb	148 ft-lb
16	15,882	125 ft-lb	167 ft-lb	16	21,970	173 ft-lb	231 ft-lb
18	19,423	172 ft-lb	229 ft-lb	18	26,868	238 ft-lb	317 ft-lb
20	24,784	244 ft-lb	325 ft-lb	20	34,284	338 ft-lb	450 ft-lb

PUSHBEAM

PUSHBEAM HEIGHT

The recommended pushbeam height for this undercarriage assembly is 10-1/2" from the center of the pushbeam to level ground. DO NOT exceed 12-1/2" in height for this undercarriage.



UNDERCARRIAGE INSTALLATION

NOTE: For easier assembly and installation, vehicle and all snowplow components should be on a smooth, level, hard surface, such as concrete.

1. If vehicle is equipped with fog lamps, disconnect each electrical harness. Remove the bumper fascia.
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NOTE: The bumper fascia may need to be permanently notched to accommodate the undercarriage assembly.

2. Align each hanger plate (**Item 6**) with the holes on the outside of the truck frame rail.
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NOTE: Use the holes specified for the correct vehicle year. The hardware kit includes all hardware needed for the different vehicle years identified.

3. Using flexible wire, position cap screw with handle (**Item 11**) through the rear access hole in the truck frame rail and out the rear hanger plate mount hole on the frame. Secure hanger plate with washer (**Item 9**) and nut (**Item 10**). Finger tighten the fasteners until all undercarriage parts are in place.
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NOTE: The '04 Ford Ranger requires T-bolt (Item 13) in this location. Position the T-bolt into the oval hole (may need to grind slightly) in the frame. Mark the end of each T-bolt to indicate which direction the "T" will face when it is installed inside of the frame rail. Secure with lock washer (Item 15) and nut (Item 14).

4. Secure the front of each hanger plate to the frame using cap screw with tab (**Item 12**), washer (**Item 9**) and locknut (**Item 10**).
 5. Mount the pushbeam (**Item 1**) square with the bottom of each hanger plate using cap screws (**Item 8**), washers (**Item 9**) and locknuts (**Item 10**).
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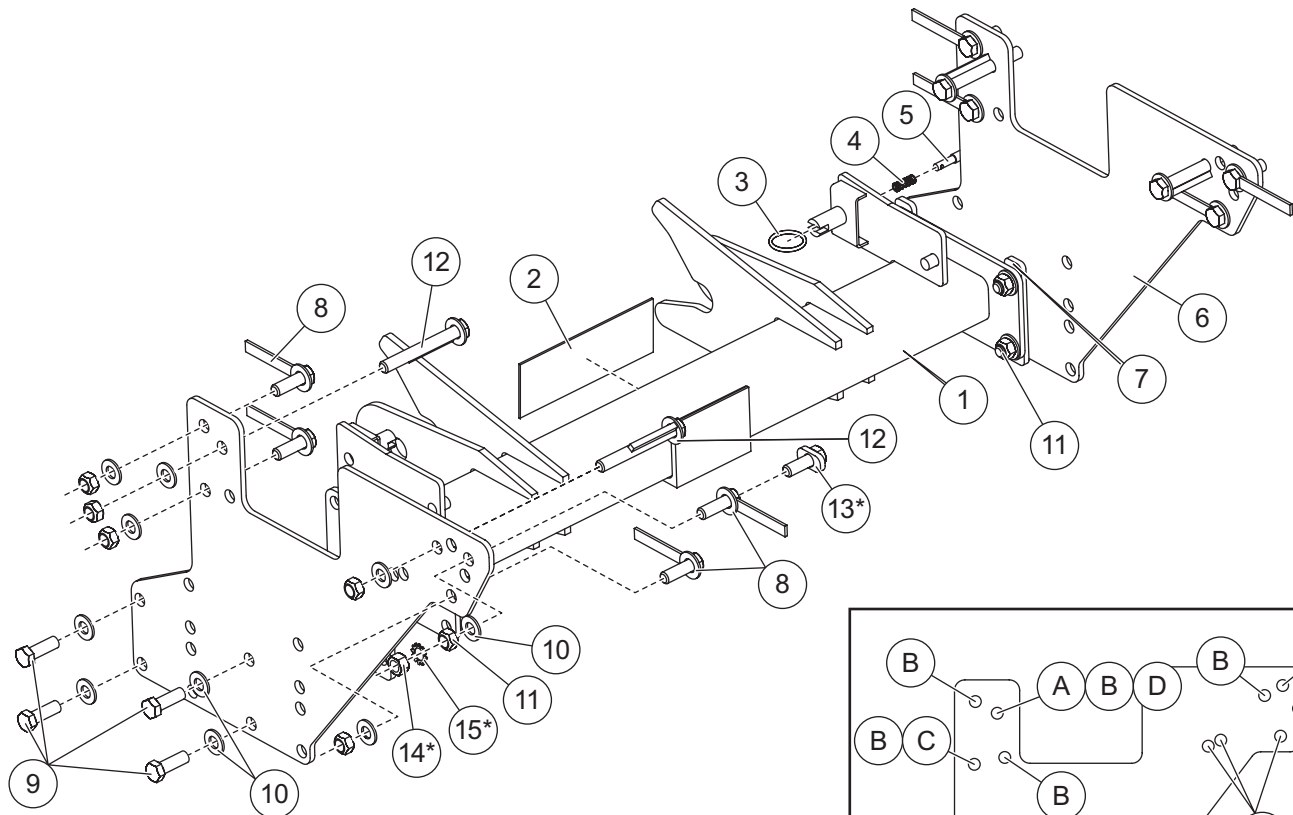
NOTE: Due to different truck frame widths, spacers are provided to prevent the hanger plates from being bent when installing the pushbeam. Use these spacers (Item 7) if the pushbeam does not mount flush to the hanger plates.

Tighten pushbeam hardware according to torque specifications.

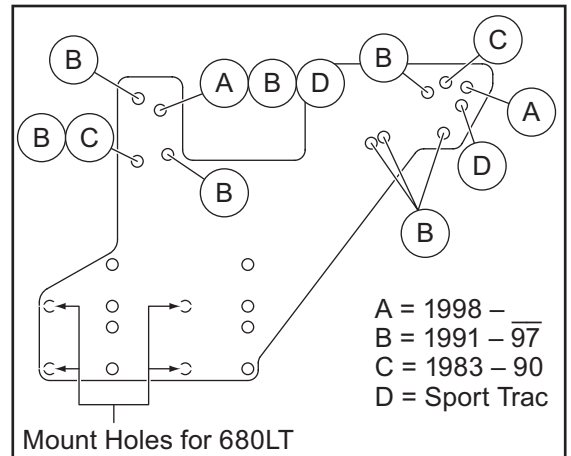
6. Level the pushbeam with the floor and torque the hanger plate hardware. Verify T-bolts are positioned with "T" perpendicular to the slot in the truck frame.
 7. Replace the bumper fascia and reconnect the fog lamp wiring, if applicable.
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NOTE: After five to ten hours of snowplow usage, retorque all undercarriage assembly fasteners.

UNDERCARRIAGE PARTS LIST



* = 2004 Ford Ranger only



B31142 Undercarriage Kit							
Item	Part	Qty	Description	Item	Part	Qty	Description
1	B31143	1	Pushbeam	6	B31129	2	Plate Hanger
2	B63162	1	Label, Pushbeam	7	B31133	4	4-3/4 x 1 x 1/4 Spacer
3	B61309	2	Split Ring, 1.25 OD	8	B31130	8	1/2-13 x 1-1/2 Hex Cap Screw G8 with Washer and Handle
4	B61000	2	Compression Spring SS	ns	B61393	1	Hardware Kit
5	B40079	2	A-Frame Latch Kit				
B61393 Hardware Kit							
9		8	1/2-13 x 1-1/2 Hex Cap Screw G5	13	B32137*	2	T-Bolt
10		28	1/2 Hardened Flat Washer	14	*	2	1/2-13 Hex Nut G8
11		20	1/2-13 Hex Locknut GC	15	*	2	1/2 Spring Lock Washer
12		4	1/2-13 x 4 Hex Cap Screw G5 with Washer and Tab				
G = Grade		SS = Stainless Steel		ns = not shown		* = 2004 Ford Ranger only	



Blizzard
PO Box 245038
Milwaukee, WI 53224-9538
www.blizzardplows.com

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